

MATD 0370 – Elementary Algebra – Review Sheet for Exam #3

Show your work on your own paper – you will not receive credit for answers only.

Do not write on this sheet.

Remember, each problem represents a concept to review

Also review your last exam – any of those topics can be on this exam.

1) Add: $(5n^3 - n^2 + 4n + 11) + (2n^3 - 4n^2 + n - 11)$

2) Add: $(8x^4 - x^3 + x - 4) + (x^5 + 7x^3 - 3x - 5)$

3) Subtract: $(2t^3 - 5t^2 + t + 7) - (5t^3 - 4t^2 + 2t + 1)$

4) Subtract: $(3x^5 - 4x^4 + 2x^2 + 3) - (2x^5 - 4x^4 + 3x^3 + 4x^2 - 5)$

Multiply for problems 5 – 13.

5) $(3x - 2)^2$ 6) $5m^2(2m^3 - m^2 + 8m + 4)$ 7) $(x - 3)(5x + 2)$ 8) $(8x - 7)(6x - 9)$

9) $(x + 6)(x - 12)$ 10) $(5x - 4)(5x + 4)$ 11) $(4m - 3r)^2$ 12) $(x - 2y)(x + 2y)$

13) $(3x - y)(2x + 7y)$

14) Add: $(2c^2d + cd^2 + 8d^2) + (-4c^2d - 2cd^2 + 10d^2)$

15) Subtract: $(4r^3t^2 - 5r^2t + rt) - (3r^3t^2 - r^2t + 8rt)$

16) Divide and simplify: $\frac{10x^4 - x^3 + 8x^2}{-2x}$

17) Divide and simplify: $\frac{54m^8 + 27m^5 - 10m^3}{9m^2}$

Factor completely for problems 18-32:

18) $12w^4 - 18w^3$ 19) $x^2 - 8x + 15$ 20) $4y^4 - 8y^3z + 6y^2z$ 21) $x^3 - x^2 + 2x - 2$

22) $4m^2 - 25$ 23) $x^2 - x - 12$ 24) $4x^2 - 4x - 15$ 25) $6t^3 + 9t^2 - 15t$

26) $3n^7 - 48n^5$ 27) $x^3 + 2x^2 - 3x$ 28) $x^2 - 10x + 25$ 29) $28 + 7x^2 + 35x$

30) $5x^2 - 26x + 5$ 31) $x^2 + 5x - 24$ 32) $r^2 - 1$

Solve for problems 33 – 37

33) $(2x - 1)(x + 3) = 0$

34) $9x^2 = 36$

35) $x^2 + x - 20 = 0$

36) $(x + 1)(x - 2) = 4$

37) $x^2 + 8x = 48$

38) A rectangular table is six times as long as it is wide. If the area of the table is 24 ft^2 , find the length and the width of the table.

39) One leg of a right triangle is 2 cm shorter than the other leg. The length of the hypotenuse is 10 cm. Find the length of each leg of the right triangle.

40) The product of the page numbers on two facing pages of a book is 420. Find the page numbers.

41) In a soccer league with t teams in which all teams play each other twice, the total number N of games played is given by $N = t^2 - t$. If there are a total of 132 games, how many teams are in the league?

42) The total cost for a book was \$16.91. If the cost includes 6% tax, what was the original (pre-tax) price of the book?

43) Solve for k : $c = \frac{k - m}{2}$